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a short introduction to selected ideas.

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"Theories on the social embeddedness of medical knowledge" –a short introduction to selected ideas.

Ivan Lind Christensen

Abstract:

The main purpose of this article is to present a short theoretical history of the broadly defined *social history of medical knowledge* according to the question of how connections are made between the production of knowledge, concepts and their social and historical embeddedness. This question represents one of the long standing challenges in social history and sociology of medical knowledge and multiple theoretical approaches have been developed in the course of the 20th century to this specific end. In this article I review a few of the important theoretical approaches including Ludwik Fleck's theory of thought styles and thought collectives, Michel Foucault's theory of epistemic changes, Karl Figlio's Marxist approach and in concluding I introduce and examine what the *Begriffsgeschichte*-approach has to offer in relation to this particular aspect of doing social history of medical knowledge.

Key words: **Social history of medical knowledge**, **Historiography**, **Contextualisation**, **Conceptual history**

Introduction

Looking from afar, the part of social history of medicine that deals with the production of medical knowledge seems to owe its very existence to the basic notion that this production to a greater or lesser extent is contingent upon its historical, political, economical and social context. As an academic endeavour this notion was born in opposition to what has been known as the 'Whiggish history of medicine' (Porter & Wear 1987: 1).

In the classical tradition, created primarily by medical doctors themselves, the progress of the medical science was, as Gert Bierger explains, "[*d*]*ominated by a simple positivist point of view. The great doctors and the great ideas were often portrayed as a march of the intellect, devising new explanations of disease and techniques for curing the ills of humankind.*" (Bierger 1993: 24). In this *march of the intellect* the social context of the medical ideas and the social entrenchment of the production of knowledge in general was not a topic often pondered.

Social histories of medical knowledge have thus brought new questions and narratives to the field. In the "*new and mature social history of medicine*", which incorporate "*the whole of society*" (Wear 1987: 230-231) it has been a pivotal task to articulate and analyse connections between the production of medical knowledge and its social and historical context. Throughout the 20th century several important theoretical approaches to this particular topic have been developed. In this article I have chosen a few of those which have exerted significant influence in shaping the field of social history of medical knowledge.

The guiding question of this article is then how the theoretical connection has been established between the production of medical knowledge and its socio-historical context.

The question will be posed to a selection of important theories and intellectual currents from the 20th century, represented by Ludwik Fleck, Karl Figlio's Marxist approach, Michel Foucault and finally to the, in this field, emerging *Begriffsgeschichte* or conceptual-history approach.[i]

The thought style, the collective and the scientific fact – Ludwik Fleck

The Polish physician Ludwik Fleck (1896-1961) is one of the early 20th century thinkers who thoroughly address the issue of the social and historical embeddedness of medical production of knowledge. His writings represent a particular medico-historical aspect of a larger relativist intellectual current in the early 20th century sciences, which was not least advanced with the relativist theory in modern physics. Fleck was in fact inspired by this relativistic turn in physics and not least by Niels Bohr and his theoretical works on the 'mutually constituting' relationship between the observer and the object under observation (White 2002).

In his socio-historical understanding of the nature of medical production of knowledge, which I shall return to in detail later, Fleck found himself in opposition not only to the aforementioned Whiggish tradition of the medical historiography but also to the influential contemporary sociology of science represented not least by Durkheim. Durkheim and others with him had already begun to investigate the production of knowledge in the so called 'primitive societies', but they had by and large left the Western sciences (upon which they themselves relied) out of their analyses. This implicit belief in the unproblematic objectivity and 'truthfulness' of Western scientific (medical) knowledge Fleck found to be an '*arch-naïve view*' (Fleck 1935/1979: 50).

Fleck demonstrated this point in his investigation of the development and genesis of a medical scientific fact and in doing so he became part of an early 20th century intellectual current in which the prior stable ontological status of medical facts was being contested.[ii]

Fleck's theory about the nature of the production of knowledge is centred on the fundamental argument that the production of knowledge goes through two periods: "*Many theories pass through two periods: a classical one during which everything is in striking agreement, followed by a second period during which the exceptions begin to come to fore.*" (Fleck 1935/1979: 9).[iii] Fleck tracks this development in his analyses of the origin of the modern concept of syphilis. From the onset of his investigation of syphilis Fleck dismissed the self assertive nature of scientific facts and scientific explanations. Instead he argued that "*[t]he explanation given to any relation can survive and develop within a given society only if this explanation is stylized in conformity with the prevailing thought style.*"(Fleck 1935/1976: 2)

Each of these periods and the shift between them is thus closely connected to Fleck's notion of the two central concepts: that of thought collective (*Denkkollektiv*) and that of thought style (*Denkstil*). Fleck defines the thought collective and thought style:

"as a community of persons mutually exchanging ideas or maintaining intellectual interaction, we will find by implication that it also provides the special 'carrier' for the historical development of any field of thought, as well as for the given stock of knowledge and level of culture. This we have designated thought style." (Fleck 1935/1967: 39).

Although Fleck's idea of thought style and thought collective is closely related to the education and training of researchers the analytical concepts should not to be seen as linguistic or linguistically determined entities. As he writes: *"neither the particular coloration of concepts nor this or that way of relating them constitutes a thought style. It is a definite constraint on thought, and even more: it is the entirety of intellectual preparedness or readiness for one particular way of seeing and acting and no other.*" (Ibid.: 64).

Rather, Fleck proposes that it is the other way around i.e. that it is the thought style that determines the formulation of concepts. He claims that there is a stylistic bond between many if not all concepts and further argues that the formulation of every concept is determined by the prevailing thought style (Ibid.: 9).[iv]

In this sense the relationship between language and thought style resembles Foucault's theory about the relationship between discursive formation and statements, when he defines the discursive formation as "*the principle of dispersion and redistribution (...) of statements*" (Foucault 1969/2006: 121). But unlike the Foucauldian discursive approach, to which I will return below, Fleck maintains that both words and ideas are the "*phonetic and mental equivalents of the experiences coinciding with them*" (Ibid.: 27). Foucault would be likely to dismiss such an understanding of a causal relationship between the experience and discourse. In this sense the Fleckian understanding of the relationship between language, thought style and the social context is more akin to that of Koselleck and the conceptual history approach, where experience is also seen as the fundamental 'matter' which is given form in concepts (Koselleck 2004a).

In the analysis of the modern concept of syphilis Fleck demonstrates how the definition of the concept influences the range of possible conclusions that can be drawn from the research and how it is only through the choice of definition that the scientific associations produced by it are seen as necessary (Ibid.: 8). This line of thought departs from the traditional understanding of the continual progress of the production of medical knowledge. For this reason Fleck does not see the modern production of knowledge as a superior, historically independent form of knowledge production: "*For it is naive to think that, although its historical development has been tortuous and complicated, we can today arrive at the concept of the disease entity 'syphilis' simply and safely merely by using current techniques of observation and experiment.*" (Ibid.: 21).

Fleck deems this assumption invalid since "*current research techniques, after all, are also the result of historical development.*" (Ibid.). In the Fleckian approach the historical embeddedness thus affects both the immaterial and the material side of the production of knowledge, both the practices and the thoughts. At the beginning of his analysis of syphilis Fleck makes a relatively short, but interesting link between a macro-structural context and the initiation of the scientific production of knowledge on syphilis. Speaking about the wars, famines and natural disasters of the 15th century and the epidemics and diseases that followed, Fleck argues that: "*These* [epidemics] *occurred with such frequency and brought such fearful misery that the attention of research workers was increased, initiating the development of syphilological thought.*" (Ibid.: 2) It is clear that in this way Fleck argued that the larger structural contextual elements could in fact constitute the onset of the production of knowledge. In doing so he emphasised the need to look at the larger socio-structural elements, which influences the medical production of knowledge.

The social embeddedness of the medical production of knowledge is to be understood at a very fundamental level with Fleck. Contemporary medical theories are seen as developments of proto-ideas, which are neither true nor false. They belong to other thought styles and as such:

"*Any absolute criterion of judgment as to suitability is as invalid for fossilised theories as a chronologically independent criterion would be for adaptability of some paleontological species. (...) If considered outside its proper environmental context, however, it could not be called either "adapted" or "unadapted.*""(Ibid.: 25-26).

Fleck's introduction of the concept of proto-ideas or pre-ideas represents another link between the medical production of knowledge and its social environment. The proto-ideas are the '*somewhat hazy*' (Ibid.: 23) starting point for many solidly established facts, which according to Fleck must be seen as developmental rudiments of modern theories and as rising from a distinct '*socio-cogitative foundation*' (Ibid.: 25). Tracking the social texture of the medical production of knowledge thus also entails identifying the hazy proto-ideas behind the well-established medical fact to their social and historical origin.

The immediate social context, in the form of the thought collective is in a very real sense the judge of meaning and truth in the production of knowledge. Addressing Schaudin's claim that *Spirochaeta pallid* should be recognised as the causative agent of syphilis, Fleck wrote that "*The meaning and truth value of Schaudin's finding is (...) a function of the community of those who, maintaining intellectual interaction on the basis of a shared intellectual past, made his achievement possible and accepted it.*" (Ibid.: 40). The production of medical knowledge is thus that which is stylistically in conformity with the thought style and is 'allowed' by the thought collective – the carrier of the thought style. As has also been argued elsewhere the theory that professional groups constitute a thought collective that carries a certain thought style provides a analytical bridge between the collective actions of researchers and the macro concepts of social structures which the researchers are embedded in (White 2002: 31).

Not only does Fleck emphasise the social conditioning of the activity of producing knowledge, he goes on to say that: "*Cognition is the most socially conditioned activity of man, and knowledge is the paramount social creation.*" (Ibid 42). It follows from this that: "*Those who consider social dependence a necessary evil and an unfortunate human inadequacy which ought to be overcome fail to realize that without social conditioning no cognition is even possible.*" (Ibid.: 43).

Put simply, one might portray the basic figure that emerges from Fleck's writings as one in which the socio-historical context determines the constitution of the thought collective, which in turn functions as the carrier of the thought style. The thought style in turn determines the formulations of scientific concepts and the development of theories and finally the development of the scientific fact. Fleck thus leaves little doubt that the production of medical knowledge is ultimately determined by the social and historical context: "*In science, just as in art and in life only that which is true to culture is true to nature.*" (Ibid.: 35).

The way to analytically approach this social embeddedness of the medical production of knowledge is through the identification and analysis of the socio-historical context of the scientific thought collective, the thought style it carries and the pre-scientific proto-ideas. It is their combined role which is crucial in understanding the development of a scientific fact.

A Marxist approach to the social embeddedness of medical production of knowledge.

"*A pretty list of diseases engendered purely by the hateful greed of the manufacturers! Women made unfit for child-bearing, children deformed, men enfeebled, limbs crushed, whole generations wrecked, afflicted with disease and infirmity, purely to fill the purses of the bourgeoisie.*" (Engels 1845/1987: 183-184)

When Friedrich Engels (1820-1895) wrote his profoundly influential book on 'The Condition of the Working Class in England' in 1845 he started a long standing tradition of Marxist approaches to the role and history of disease and medicine in capitalist societies. Especially in the late 1970s in the wake of a more general recurrence of Marxist inspired social studies several works were published that deal with Marxist approaches to the history and role of medicine in capitalistic societies (see e.g. Renaud 1975: Navarro 1976: Waitzkin 1981). For a detailed review of the Marxist approaches to medicine in the 1970s see Wright 1980.

When in the following I have chosen to primarily take up the work of Karl Figlio it is, therefore, not out of lack of alternatives, but because Figlio presents a very sophisticated and interesting adaption of Marxist thinking to the field of medical production of knowledge, which remains true to some of the fundamental ideas formulated by Marx and Engels.

What characterises the Marxist analysis of the production of medical knowledge including Figlio's analysis is the starting point in the basic assumption of historical materialism.

In historical materialism the assumption is that the material basis, especially the ownership of the means of production, not only determines the current state of societies but also their future development. In other words, the approaches relate to the classical Marxist model of base and super structure and the predominance given to the material base. This notion results in a general focus on larger structural contextualisation's of the medical production of knowledge. This does not mean that the Marxist studies may not touch upon the micro-level of individual interaction (as for example the doctor-patient relation), but the Marxist studies usually study this micro-level interaction in relation to larger societal elements, as for example the medical profession as a class with particular class interests. A general argument is that the forces that shape medicine and the medical production of knowledge is not to be found at the individual level of medical practitioners, but at the level of society (Navarro 1976: vii).

Closely connected to the focus on the material base and its determination of the medical production of knowledge as part of the super structure, is the conflict perspective. Inherent in the philosophy of historical materialism is the theory that what drives history is a continual class struggle determining not least the ownership of the means of production. Different classes of society thus have different and incompatible class interests. As I shall return to below this perspective has been applied to analyses of the medical profession in particular.

These basic assumptions taken from historical materialism are of great significance when we want to understand how the social embeddedness of medical knowledge is conceptualised in the Marxist approaches. This is also the case for Figlio's study of chlorosis among young working class and upper class women in the 19th century[v] and miners' nystagmus among miners in the late 19th and early 20th century.[vi]

Two basic arguments introduces Figlio's analysis: that the medical diagnoses must be seen as the result of a "*social labour proces*" (Figlio 1985: 142) and not simply as a matter of naming a biological entity, and secondly, that medical knowledge represents an ideology in the sense that it embodies values and constitutes an "*aggregate of routines through which we learn to accept the organisation of nature and society as it is*" (Ibid.: 129).[vii] Medical production of knowledge thus creates a certain order by articulating that which was unarticulated (physical or psychological phenomena into disease categories) and thereby making it fit into a particular perception of a natural and not least social order.

Much like Fleck, Figlio argues that the medical production of knowledge ought not to be studied detached from its social context. However with Figlio this is not due to socially originated pre-scientific ideas or certain scientific thought collectives carrying particular thought styles. Figlio sees *"the diagnosis of a clinical entity as the simultaneous appearance of an object and an observing subject within a social space"* (Ibid.: 160) and this *social space* is the crucial element since, to a large extent, it determines the outcome of the medical production of knowledge.

Language, words, concepts or discourse in general are not the main focus of this approach although Figlio, in discussing the works of the early epidemiologist Rudolf Virchow (1821-1902), does mention social, political and medical discourses. Here he requires the medical historian *"to discover the social and political discourse within the scientific discourse; not in moralistic flourishes, but in the aetiology itself and in the historical emphasis given to categories of disease."* (Ibid.: 135). While this can sound almost Foucauldian in essence it is important to note that the discourses in this context reflect the material base that has produced them. Medical theory, Figlio writes, becomes articulated *"as a reification of class dynamics."* (op. cit.).

Likewise, the scientific discoveries of diseases – another crucial element in the medical production of knowledge – are seen as a reflection of particular class relations. In his analysis of cholorosis in 19th century Britain Figlio demonstrates how the disease category emerged as a manifestation of the class dynamics between a rising middle class (the medical profession) and the working class (young working class women) (Ibid.: 142). At the beginning of the century it was almost exclusively wealthy upper class or aristocratic women who were diagnosed with this disease. Due to the social reorganization in Britain during the 19th century, the urbanization, increased industrialization and the following change of gender roles in relation to labour, as part of the rising middleclass the medical profession came into contact with young working class girl as they increasingly took jobs as servant girls. This coincided with the fact that in the last part of the century it was almost exclusively working class women who were diagnosed.

In explaining this Figlio lets the aforementioned focus on the medical profession and their class interests come to fore. According to Figlio, the symptoms and the aetiology of cholorosis reveals the medical profession's struggle to distance itself from on the one hand the working class and on the other the very wealthy upper class:

"*In those whom they* [the members of the medical profession as part of the rising middle stratum] *differentiated from themselves, they saw a mixture of striving and gentility; they resented the respectable working class for its appearance of already having acquired a 'genteel' status which really had to be acquired by effort, just as they resented aristocratic idleness.*" (Ibid.: 139)

The diagnoses and the aetiology of the disease are thus seen as a result of both the changing economical structures and the following social reorganisation and as a projection of the socio-political values of an emerging middle stratum medical profession.

The social determination of medical knowledge is highlighted again in the analysis of miners' nystagmus. Here the medical profession came to play an important role as experts on whether or not the disease should enable compensation from employers to employees. The aetiology became of crucial importance in this (class) struggle since it was the courses of the disease that would decide where to place the (economical) responsibility.

The medical profession did however come up with at least two different aetiologies, one in which the disease was explained as a condition originating from a natural susceptibility within the worker, making the workers claims for compensation less legitimate, and one in which the condition was seen as the consequences of a work related 'accident', making the same claims very legitimate (Ibid.: 153-154). Figlio uses this example to put forth the argument that: "*The constitution of the clinical entity can't be separated from the nexus of social relations of production (...) miners on one side, employers on the other, government and the medical profession as mediators.*" (Ibid.: 156). The nexus of social relations of production is thus seen as an indispensable part of the medical production of knowledge and Figlio leaves little doubt about the fundamental social nature of the medical production of knowledge when he in concluding argues that: '*diseased living nature, like "'Nature', is a social category; its framing and classification, as processes, are resolution of class forces.*" (Ibid.: 161).

Figlio's analysis leaves little doubt that the realm of medical thought should be seen in close connection to the material base upon which it has developed.

Foucault

Foucault's influence in the field of medical history over the last 40 years can hardly be overestimated.[viii] His influence has had at least two significant consequences: that there are numerous analyses of the works of Foucault and secondly: that no matter how nuanced one tries to be in ones rendering of Foucault's ideas one can be sure to contradict at least one or two other accounts of the these same ideas. This I is not least the case because Foucault himself did not stick to one interpretation of what he was studying.

Historians of medicine have found inspiration in several of Foucault's works, but it is undoubtedly his medico-historical account of the emergence of the clinic in France in the late 18th and early 19th century that has drawn most attention.[ix]

The main focus in The Birth of The Clinic is the establishment of hospitals and a new medical 'gaze' in medicine in France in the late 18th and early 19th century (1780-1820).

There were of course hospitals prior to this period, but Foucault's point is that before the beginning of the 19th century the hospitals had merely functioned as places that removed the sick person from society. Places, "[*w*]*hich for many* [were] *nothing but 'temples of death'*." (Foucault 1963/2008: 18). Hospitals were, writes Foucault, perceived as far from the optimal setting for healing. They were seen as an "artificial locus" in which diseases ran the risk of losing their essential identity (op. cit.). According to Foucault this changed in the aforementioned period. The clinic emerged as a thoroughly organized artificial space in which the doctors could follow the development of diseases in a new manner. A new space of experience had emerged. In this sense the hospitals in their new shape constituted a new social context for the production of medical knowledge. In his review Figlio notes that the clinic comes to represents a fusion of "*an empirical, anti-theoretical research methodology based upon autopsy and pathological anatomy, practical clinical instruction at the bedside, and the siting of both research and teaching in large hospitals, where a limitless variety of morbidity was available*" (Figlio 1977: 165). It is thus the fusion of the ideas and the space that constitutes the clinic.

In relation with this Foucault proposes that the medical gaze was fundamentally changed. The early 19th century saw the rise of the "[t]*he observing gaze*" (Ibid.: 131) about which Foucault says, "*The observing gaze manifests its virtues only in a double silence: the relative silence of theories, imaginings, and whatever serves as an obstacle to the sensible immediate; and the absolute silence of all language that is anterior to that of the visible.*" (Ibid.: 132). What Foucault refers to here is the anti-theoretical and anti-speculative claim of this new medical rational and the supremacy given to the new vocabulary connected to the empirical observation. Pathological anatomy had been born to replace the former static nosology of the 18th century (Figlio 1977: 167). In the combination of this gaze, the clinic and the practice of autopsy the body had become the site of disease in a very different way than it was before.

This historical shift has traditionally been represented as the (enlightened) move from old inadequate theories and philosophies of medicine to observation-based (empirical) medical research, which in turn created a more objective and true science of medicine. However, Foucault questions this hypothesis and argues that what we are witnessing in this period is not progress, but discontinuity between two different epistemes:

"*The access of the medical gaze into the sick body was not the continuation of a movement of approach that had been developing in a more or less regular fashion since the day when the first doctor cast his somewhat unskilled gaze from afar on the body of the first patient; it was the result of a recasting at the level of epistemic knowledge (savoir) itself, and not at the level of accumulated, refined, deepened, adjusted knowledge (connaissances).*" (Foucault 1963/2008: 168-169).

In order to understand this epistemic change and the possible relations it may have to Foucault's view on the relation between the social and the medical production of knowledge one has to go to *The Archaeology of Knowledge* (Foucault 1969/2006) were he defines the episteme in the following manner:

"*By episteme, we mean, in fact, the total set of relations that unite, at a given period, the discursive practices that give rise to epistemological figures, sciences, and possibly formalized systems (...) it is the totality of relations that can be discovered, for a given period, between the sciences when one analyses them on the level of discursive regularities.*" (Ibid.: 211)

By invoking the concept of the episteme there is little doubt that Foucault like both Fleck and Figlio understood the scientific production of knowledge as something other than the mere result of individual researchers and their achievements.

In the theory about the epistemic change it should thus be possible to pose the question of how the production of medical knowledge is linked to 'the social'. However, finding the answer is difficult at best. Firstly, it is not at all certain that Foucault would accept such a divide between a production of knowledge and its social context. Taking into account Foucault's theory of the discursive nature of most phenomena it is clear that there is no essential difference between the scientific discursive practices and those, which could be termed social.

Secondly Foucault neither makes it clear just why this epistemic change took place nor what role the social embeddedness had in this change. As Rabinow has also noticed "*In The Birth of the Clinic (...) Foucault offers no causal explanations for these changes, leaving his readers somewhat at sea with regard to how he evaluates the interplay of intentional action, socioeconomic changes, particular interests and accidents.* "(Rabinow 1991: 10). This is because Foucault never really took that much interest in the classical historical question of 'why' and instead gave supremacy to the question of 'how'. But since it is in the structure of these causal explanations that one may hope to find the link to the social entrenchment of the production of knowledge, this absence makes the task at hand somewhat complicated.

It seems clear that the structuring of the production of knowledge runs deeper than Fleck's thought collectives and thought styles. One could argue that there are some similarities between Fleck's concept of thought style and Foucault's concept of scientific discourses. Both represents a set of limitations on what can be discovered, articulated and known within the sciences and as such they also represents forms of productive power.

However, even at this level there is a crucial difference: while Fleck to some extent acknowledges the individual researcher, Foucault questions the ontological status of the knowing subject as such. Simplified, one might say, in Foucault's terms, that it is not subjects that make the discourses any more than it is the discourses that make up the subjects.

Although Foucault sometimes draws upon explanatory schemes that have a lot in common with historical materialism it seems safe to say that he sees no straight line of determination between the class structure or economic system of a society and the production of medical knowledge. A class perspective is prominent in several of Foucault's studies and a certain amount of economical determinism might also be detected as in *The History of Sexuality* were Foucault proposes that, "*[t]his bio-power was without question an indispensable element in the development of capitalism; the latter would not be possible without the controlled insertion of bodies into the machinery of production and the adjustment of the phenomenon of population to economic processes.*" (Foucault 1976/1998: 140-141) and later in the same work he speaks of ascetic morality as an event "*bound up with the development of capitalism*" (op. cit.). In *The Birth of the Clinic* Foucault also hints at a connection between the epistemic change within medicine and the socio-political or ideological context (the French revolution) it took place alongside with. He writes that,

"*There is, therefore, a spontaneous and deeply rooted convergence between the requirements of* political ideology *and those of* medical technology *(...) The structural theme that guides all structural reform from 1789 to Thermidor Year II is that of the sovereign liberty of truth: the majestic violence of light (...)*" (Foucault 1963/2008: 45-46)

However, Foucault again avoids the question of causality by stressing the *convergence* of the political-ideological and medicine. The emphasis on concurrences, convergence and mutual construction is a general theme in Foucault's works.

But the supremacy given to the question of 'how' and the emphasis on concurrences should not distract us from the very basic Foucauldian argument; that the medical production of knowledge (like the economic, political and other forms of knowledge) is embedded in large systems of ordering knowledge (the epistemes) which are bounded to specific social and historical circumstances and changes throughout history.

Begriffsgeschichte and histories of medical knowledge – Reinhart Koselleck

The German tradition of *Begriffsgeschichte* or conceptual history has been founded by the German historian Reinhart Koselleck and the researchers with whom he work on the German political lexicon, *Geschichtliche Grundbegriffe* (Koselleck et. al. 1972). In this monumental lexicon Koselleck and his colleagues investigates a selection of socio-political key concepts (*Grundbegriffe*) and how these concepts alter meaning during what Koselleck terms *Saddelzeit* (app. 1750-1850) on their route to modernity (*Neuzeit*). The basic aim of this analysis is to understand what characterises the selected key concepts in modernity, but also, and on an even more general level, to understand the changes in human historical consciousness. *Begriffsgeschichte* is, as such, placed in the tradition of history of ideas.

Unlike the abovementioned researchers Koselleck has not himself written medical history,[x] so the point of this section of the article is to show how the application of the analytical tools provided by the conceptual history approach can be of help in analysing relations between the social and the production of medical knowledge. One of these analytical tools is the fundamental understanding of language and concepts as experience-given-form and the connected view that "*the concepts lending the source-language its shape serve as a heuristic entry into a comprehension of past reality.*" (Koselleck, 2004a: 255). This theoretical understanding of concepts opens an analytical perspective in which the concepts used in the medical production of knowledge appears as gateways to the social context and its possible effects on the medical production of knowledge.

However, to fully understand what the conceptual history approach can offer in the study of medical history it is necessary to look at the theoretical understanding of the relationship between concepts and context. With the linguistic inspiration from Ferdinand Saussure concepts are seen as entertaining referentiality, that is they refer to a phenomenon in reality. Furthermore they distinguish themselves from other concepts by means of a particular sound pattern and a particular idea that sets it aside from other ideas (Saussure 1916/1983: 65/97). While the relation between word and concept is relatively fixed the relation between word/concept and the phenomenon it refers to in reality is arbitrary. This assumption, combined with the assumption that the ways in which social phenomena are conceptualised has an impact on how one might act in relation to this phenomenon, opens up a very clear dimension of power.

Apart from these rather basic linguistic assumptions the concepts, within *Begriffsgeschichte*, are also seen as functioning as both factors and indicators (Koselleck 2004b). This is to say that the concepts function as indicators for particular historical, social and political circumstances. At the same time they also function as factors within the historical context, facilitating changes in the socio-historical circumstances in which they appear. Their ability to facilitate changes is connected to the theory that depending on the definition of a particular concept different possible ways of acting becomes possible. The concepts are thus seen as both results of their context and as formative forces within this context.

While this theory of the dual function of key concepts seems very convincing and indeed is a very fruitful analytical tool, it is not without its problems. When for example the concept of *fairness* and *social justice* appears in the social epidemiological research texts, which happened in the Danish case in the late 19th century (Christensen 2010), there are a number of possible socio-political contexts, which could constitute the relevant contextual explanation for the 'sudden' appearance of these concepts. Surely there was a religious context, one which fuelled the bourgeois philanthropic societies and their attempts to rescue the 'deserving poor'. But at the same time there was a clear political-ideological context where the rise of socialism, the appearance of social reformists and the political struggles between the bourgeoisie and the emerging organised working class and the political radicals gave the same terms a very different colouring.

While it might of course be that both contexts played a role (as it may be argued that any context can be of relevance to a certain effect), the historian often wishes to determine which context is the most relevant, that is, what contextualisation seems to give the better answers to the question of why or how a certain effect/phenomenon appeared or disappeared. Here the conceptual history approach offers no help. The contextualisation is still a choice or construct made by the historian (Burke 2002: 172). It thus remains the task of the historian to arrange his or her arguments convincingly concerning what shall constitute the context.

What the conceptual history approach can do is to direct our attention to the more fundamental but often less obvious parts of the medical production of knowledge namely the conceptual architecture and the contingency of the concepts used. One could say that the conceptual history approach offers the opportunity to examine some of the most crucial components in this machinery – the building blocs, so to speak, of the production of medical knowledge.

Another useful analytical tool from the conceptual history approach is the understanding of concepts as always being constituted by spaces of experience and horizons of expectation.

The space of experience of the individuals within a language community is constituted by what Koselleck calls present past, taken very literally; past made present. But the concepts do not just contain present past, they also contain horizons of expectation or what Koselleck calls 'present future.' Thus these two categories consist of respectively a certain historical determination of what we can think about the concept in question and what our past and present allows us to expect for the future. This means that when we analyse the history of concepts we can become more aware of the past understanding of the past and we can also discover futures past, that is, expectations contained in historical concepts also those that were never realised.

The Danish historian Lene Koch has made a interesting study of the concept of *eugenics* in which she shows how the changes in the concept of eugenics reflects the changing spaces of experience and horizons of expectation in the Scandinavian scientific community (Koch 2006). At the beginning of the 20th century the concept of eugenics was defined in a very positive way. The space of experience contained in the concept was clearly marked by a strong believe in scientific progress and rationalism and eugenics held the promise of deliberation from the threat of degeneration of whole populations. The horizon of expectation contained in the concept was one in which humankind grew ever stronger and ever healthier through the progress of science and the rational organisation of human society. And the state played a crucial role in this 'vision of the future'.

After the Second World War the space of experience and the horizon of expectation had changed dramatically. Both rationalism, massive state control (in the form of totalitarian states) and scientific progress had showed their dark side. The definitions of eugenics in the years after the war is illustrates an attempt to create a distinction between what happened in Nazi Germany – race hygiene – as 'bad science' and eugenics as a sound institutionalised practice (the Danish sterilisation of mentally ill continued until the 1970's).

The great hopes contained in the pre Second World War-concept had disappeared. Gradually in the last half of the 20th century the concept both lost importance and became more and more associated with the 'wrong doings' of the past. In the last part of the 20th century and to some extent until today, the great hopes of contained in the pre Second World War-concept has been replaced by a great fear. As Koch writes, "[*w*]*ith an analysis of a concept such as eugenics I have applied a specific gaze onto the concept making it clearer how the concept is not historically static but has developed from a term designating an optimistic hope to one designating a dangerous threat.*" (Koch 2006: 343). Koch's analysis helps us to understand how and why public health researchers (and politicians) advocated and put significant resources and energy into developing eugenic practices, such as forced sterilisation, in the pre-World War II era, which may be hard to understand from a post-World War II perspective. It also shows how the analysis of these space of experience and horizons of expectations can inform us about turns, trends and ruptures in the production of medical knowledge.

Being part of the so-called 'linguistic turn' the *Begriffsgeschichte*-approach does have some similarities to the work of Foucault and the idea of discourse (Valkhoff 2006). This is the case not least in the initial understanding of language as a feasible entry point into the analysis of past realities and it is also the case in the shared assumption that conceptualisation is not just a transparent representation of reality, but also a force actively forming this reality.

However there are also significant differences. The unit of analysis in *Begriffsgeschichte* is the concept and to a certain extent the semantic field which surround the concept. In the Foucauldian discourse analysis it is the statement and furthermore the regularities in the distribution of statements which are the focal point. As Foucault writes:

"*I do not wish to take as an object of analysis the conceptual architecture of an isolated text, an individual œuvre, or science at a particular moment in time. One stands back in relation to this manifest set of concepts; and one tries to determine according to what schemata (of series, simultaneous groupings, linear or reciprocal modification) the statements may be linked to one another in a type of discourse (...)*" (Foucault 1969/2006: 66-67).

While this might seem like a rather petty technical difference in the theoretical approaches, it is in fact of some consequents. As mentioned earlier, Koselleck sees the concept as constituted by the experience and expectations of the historical agents and he argues that, "*there is no history which could be constituted independently of the experience and expectations of active human beings.*" (Koselleck 2004a: 256). Foucault would most likely disagree, at least if one looks at his response to the criticism of his 'history'. Here he makes it a point that what his critics "*bewailed with such vehemence is not the disappearance of history, but the eclipse of that form of history that was secretly, but entirely related to the synthetic activity of the subject (...)*" (Foucault 1969/2006: 15). In this sense the difference in the object of analysis reflects the more overarching difference in research interests: the difference between the wish to understand the historical development of concepts and how they reflect the changing experiences and expectation of historical agents and the wish to identify larger discourses, discursive formations, epistemes and truth regimes which govern the production of not only knowledge, but perhaps even social reality as such.

As I have tried to illustrate by way of Koch's analysis, the conceptual history approach allows the historian to treat the concepts and the conceptual architecture within the medical production of knowledge as expressions of the spaces of experience and horizons of expectation entertained by medical researchers of a particular time and place. The social, and historical embeddedness of the concepts and, thus, the production of knowledge, is shaped through history and that is a central point in this approach. Furthermore it can be used to reveal the struggles (class, sex, race or others) that shape the production of knowledge; struggles, which are otherwise concealed by the language of objectivity employed in the medical writings.

As mentioned before the approach also opens a power perspective. Following the assumption that the conceptualisation of phenomena in reality is not merely a transparent reflection of the things in themselves, the approach also gives the opportunity to study the range of actions allowed by particular conceptualisations. In the study of medical production of knowledge this can fruitfully be applied to investigations of how and why certain ideas of medical intervention appear and change over time (Christensen 2010). These interventions are the product of the conceptualisation and in this way of looking at the interventions the prior struggles (for alternative conceptualisations and thus alternative types of interventions) becomes visible.

Concluding remarks

Above I have presented a few of the answers given in the course of the 20th century to the question of how we, as historians of science, can understand the relationship between the production of medical knowledge and its socio-historical embeddedness. I have not dealt sufficiently with the weaknesses of the different theories. There are several to take up, but I will leave that for others to do. Neither have I tried to find the best approach. I hope it is clear from my analysis that each approach offers a special and enriching insight into the (possible) ways that we may understand the social entrenchment of medical production of knowledge.

The Fleckian approach is inspiring in its keen focus on the role of the scientific communities, the development and legitimatization through the thought collective of special thought styles which produce particular sets of medical knowledge. Furthermore, the suggestion to track the scientific ideas to their pre-scientific social origins could undoubtedly be rewardingly applied to many cases in the study of medical knowledge.

The Marxist approach presented by Figlio has one of its crucial forces in the macro-orientated perspective and persistent claim that the production of medical knowledge must be seen in relation to the class dynamics in a given society. Marxist inspired analysis like that of Figlio shows, I would argue, that the claim that the realm of thought is not detached from the material base upon which it stands by no means is 'outdated' or out of touch with present day reality.

The Foucauldian approach is enriching in many ways, which the large body of Foucault inspired literature testifies to. The analysis of regularities in the ways things are put into words, that is, the analysis of the medical discourse and its connection to other political, economical, ideological etc. discourses opens a vast number of interesting analytical starting points. The focus on the historical (and social) contingency of the very fundamental epistemological figures in the human sciences produced and framed by the historical episteme likewise lends itself to more indebt analysis of the production of medical knowledge.

Although the Koselleckian conceptual history approach has been developed 'outside' medical history proper, it does entertain some inspiring analytical tools for the investigation of the relationship between the medical production of knowledge and its social context. Among these the stern focus on concepts as pathways to the broader social contexts that have contributed to their meaning gives an opportunity for the historian to break free of the otherwise immensely dense vocabulary of objectivity that characterizes the medical production of knowledge.

[i] Investigating the selected theories of the social and historical embeddedness of medical knowledge production, I will, paradoxically some might argue, not be treating the social and historical embeddedness of these theories themselves. This is, however, not due to a failure to understand that the thinkers and broader intellectual currents that will be represented in the following are also subject to the same kind of embeddedness, which they wish to reveal in the medical production of knowledge. On the theoretical level I would definitely argue that they are. But the scope of this article is more narrowly defined, i.e. delimited to only dealing with the theoretical ideas themselves.

[ii] Georges Ganguilhem and his work on *The Normal and the Pathological* (*Le Normal et le pathologique*, 1942) should also be mentioned here as another early 20th century pioneering work within the history of medical science, which in a very fundamental way challenged the hitherto general understanding of the ontological status of the medical fact. And in doing this Ganguilhem became one of the main sources of inspiration for Foucault in writing his very influential *The Birth of the Clinic*.

[iii] The similarity with Thomas Kuhn's theory of the scientific paradigms and shifts in paradigms (Kuhn 1996: 10) is not accidental. Kuhn, who also introduced Fleck's works to the Anglophone academia, has been inspired by Fleck's work on the genesis and development of a scientific fact and has written an interesting foreword to the English translation.

[iv] Fleck writes: '*Words as such do not have fixed meanings. They acquire their most proper sense only in some context or field of thought. This delicate shading of the meaning of a word can be perceived only after an "introduction," whether historical or didactic.*' (Ibid.: 53)

[v] A disease with symptoms such as menopause, anaemia, headache and delayed maturation.

[vi] A disease with symptoms such as oscillatory movement of the eyeballs, headaches, disturbed sleep, night blindness and depression.

[vii] Figlio's study is thus centred on the creation of the medical diagnoses, however in the following I will allow my self to more or less equate this crucial part of the production of medical knowledge with the process of creating medical knowledge in general as Figlio also seems to do several places in his analysis (see eg. Figlio 1985: 135).

[viii] There is also a significant and rich literature from the Foucault-inspired feminist studies on the relationship between gender and the production of scientific knowledge (see e.g. Harding 1991). This literature will however not addressed in this article.

[ix] The reception of his 'The Birth of the Clinic' from 1969, especially in the Anglophone world has been somewhat mixed. Some appreciate the special style and type of thinking that Foucault's study represent (as Figlio did in his review, see Figlio 1977) while others have found it to be "*terribly annoying because of the impressionistic style*" (Hahn 1975: 1503).

[x] Although in his analysis of the concept of crisis he does touch upon the concept's origin in early medical history (see Koselleck and Richter 2006)

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